

**U. S. DEPARTMENT OF ENERGY  
WORK BREAKDOWN STRUCTURE DICTIONARY  
PART II - ELEMENT DEFINITION**

<b>1. PROJECT TITLE/PARTICIPANT</b> Environmental Management/Paducah Remediation Services, LLC (PRS)		<b>2. DATE</b> 11/02/07	<b>3. IDENTIFICATION SITE</b> Paducah Project DOE Portsmouth/Paducah Project Office (PPPO)
<b>4. WBS ELEMENT CODE</b> 04.11.10.10		<b>5. WBS ELEMENT TITLE</b> Outyear Surface Water Off-site	
<b>6. INDEX LINE NO.</b> N/A	<b>7. REVISION NO. AND AUTHORIZATION</b> Rev. 1		<b>8. DATE</b> 11/02/07
<b>9. APPROVED CHANGES</b> N/A			
<b>10. SYSTEM DESIGN DESCRIPTION</b> N/A		<b>11. BUDGET AND REPORTING NUMBER</b> N/A	
<b>12. ELEMENT TASK DESCRIPTION</b>  <b>THIS IS A PLANNING LEVEL WBS DICTIONARY</b>  <u><b>WBS STRUCTURE</b></u>  <ul style="list-style-type: none"> <li>• WBS 04.11.10.10.01 Surface Water Off-site Subproject Management</li> <li>• WBS 04.11.10.10.02 RI/FS Work Plan</li> <li>• WBS 04.11.10.10.03 Remedial Investigation</li> <li>• WBS 04.11.10.10.04 RI/FS Report</li> <li>• WBS 04.11.10.10.05 Feasibility Study</li> <li>• WBS 04.11.10.10.06 Proposed Plan</li> <li>• WBS 04.11.10.10.07 Record of Decision/LUCIP</li> <li>• WBS 04.11.10.10.08 Remedial Design Work Plan</li> <li>• WBS 04.11.10.10.09 -Remedial Design Report</li> <li>• WBS 04.11.10.10.10 Remedial Action Work Plan</li> <li>• WBS 04.11.10.10.11 Remedial Action</li> <li>• WBS 04.11.10.10.12 Remedial Action Completion</li> </ul> <u><b>INTRODUCTION</b></u>  <p>The objective of this subproject is to perform a Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) remedial action of the Bayou and Little Bayou Creeks. This remedial action is sequenced to occur after completion of the Surface Water Operable Unit (On-site). The remedial action includes the outfalls investigated under the scope of the Surface Water Operable Unit (On-site) (Outfalls 001, 002, 008, 010, 011, 012, and 015) beginning at their respective Kentucky Pollutant Discharge Elimination System (KPDES) compliance points to their drainage into Little Bayou and Bayou Creeks and continues along Little Bayou and Bayou Creeks to their respective discharge points into the confluences of the Ohio River. This remedial action first would identify contamination that poses an imminent threat to human health and the environment (hot spots) and then conduct targeted excavation and site restoration to eliminate that threat.</p> <u><b>LOGIC RELATIONSHIPS</b></u>  <b>Interfaces:</b> <u>Internal to Contractor</u> <ul style="list-style-type: none"> <li>• All contractor project managers and staff</li> <li>• All subcontractors</li> </ul> <u>External to Contractor</u> <ul style="list-style-type: none"> <li>• U.S. Department of Energy (DOE) Portsmouth/Paducah Project Office and support contractors</li> </ul>			

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<b>4. WBS ELEMENT CODE</b> 04.11.10.10	<b>5. WBS ELEMENT TITLE</b> Outyear Surface Water Off-site	
<ul style="list-style-type: none"><li>• DOE Headquarters or other DOE sites (if applicable)</li><li>• U.S. Environmental Protection Agency (EPA)</li><li>• Commonwealth of Kentucky (KY)</li><li>• Site tenants including United States Enrichment Corporation (USEC); Uranium Disposition Services, LLC; and Swift &amp; Staley Team (SST)</li><li>• USEC services in the area of property, information technology, radios, etc.</li><li>• SST, particularly in the areas of property management, information technology, and security.</li><li>• Nevada Test Site (NTS): Profiling and disposition of newly generated and classified and fissile low-level waste (LLW), if required or applicable.</li><li>• <i>EnergySolutions</i>: Profiling, treatment, and disposition of mixed and LLW, if required or applicable.</li><li>• Toxic Substances Control Act (TSCA) Incinerator, if required or applicable.</li><li>• Commercial treatment, storage, or disposal (TSD) facility: For treatment and disposal of non-radioactive hazardous waste, if required or applicable.</li><li>• Stakeholders</li><li>• Citizens Advisory Board and supporting contractor Edward Holmes, Inc.</li><li>• DOE Integrated Safety Management System (ISMS) Verification Team</li><li>• Other nonregulatory key interfaces</li></ul>		
<b>Time Sequencing with Other Work:</b> <ul style="list-style-type: none"><li>• This remedial action is sequenced to occur after completion of the Surface Water Operable Unit (On-site), with completion by 2017.</li></ul>		
<b><u>SCOPE DESCRIPTION</u></b>		
<b>WBS 04.11.10.10.01 Surface Water Off-site Subproject Management</b> <p>Provide overall management activities associated with this subproject. Activities performed under this subelement include the following:</p> <ul style="list-style-type: none"><li>• Perform technical, contractual, and project functions necessary to effectively manage and report scope, schedule, and budget.</li><li>• Manage and transmit required documents to the Administrative Record.</li><li>• Maintain all activities within the defined safety, environmental, and quality requirements.</li><li>• Perform technical and personnel management functions.</li><li>• Maintain technically qualified and properly trained personnel.</li><li>• Develop, evaluate, and report project performance metrics.</li><li>• Interface with DOE, KY, EPA, other prime contractors, and stakeholders, as needed.</li></ul> <p>The method(s) used for determining earned value for this WBS element is Level of Effort.</p>		
<b>WBS 04.11.10.10.02 RI/FS Work Plan</b> <ul style="list-style-type: none"><li>• Develop Remedial Investigation/Feasibility Study (RI/FS) Work Plan.</li></ul> <p>The method(s) used for determining earned value for this WBS element is Percent Complete.</p>		
<b>WBS 04.11.10.10.03 Remedial Investigation</b> <ul style="list-style-type: none"><li>• Conduct a remedial investigation of Bayou Creek, Little Bayou Creek, and Outfalls 001, 002, 008, 010, 011, 012, and 015 to refine the scope of the remedial action.</li><li>• The remedial investigation includes the characterization of outfalls investigated under the scope of the Surface Water Operable Unit (On-site) (Outfalls 001, 002, 008, 010, 011, 012, and 015) beginning at their respective Kentucky Pollutant Discharge Elimination System (KPDES) compliance points to their drainage into Little Bayou and Bayou Creeks and continues along Little Bayou and</li></ul>		

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<p>Bayou Creeks to their respective discharge points into the confluences of the Ohio River.</p> <ul style="list-style-type: none"><li>• The remedial investigation will provide data that can be used to identify areas of elevated contaminant concentrations (i.e., identify "hot spots") in surface soil and sediment along Bayou Creek, Little Bayou Creek, and Outfalls 001, 002, 008, 010, 011, 012, and 015 beginning at their respective Kentucky Pollutant Discharge Elimination System (KPDES) compliance points to their drainage into Little Bayou and Bayou Creeks and identify the extent of contamination in these areas. In addition the remedial investigation will provide data that can be used to characterize contamination in soils and sediment found in Bayou Creek, Little Bayou Creek, and Outfalls 001, 002, 008, 010, 011, 012, and 015 beginning at their respective Kentucky Pollutant Discharge Elimination System (KPDES) compliance points to their drainage into Little Bayou and Bayou Creeks.</li><li>• The remedial investigation will utilized Activity I sampling to identify areas of elevated contaminant concentrations (i.e., identify "hot spots") in surface soil and sediment along Bayou Creek, Little Bayou Creek, and Outfalls 001, 002, 008, 010, 011, 012, and 015 beginning at their respective Kentucky Pollutant Discharge Elimination System (KPDES) compliance points to their drainage into Little Bayou and Bayou Creeks and identify the extent of contamination in these areas. Activity I samples will collected at a rate of 30 samples for every ½ acre for indicator chemicals (i.e., uranium-238, cesium-137, and Total PCBs). It is estimated that a total of 5,489 Activity I samples will be collected with additional QA/QC samples.</li><li>• The remedial investigation will utilized Activity II sampling to fully characterize the nature of contamination in soils and sediment in Bayou Creek, Little Bayou Creek, and Outfalls 001, 002, 008, 010, 011, 012, and 015 beginning at their respective Kentucky Pollutant Discharge Elimination System (KPDES) compliance points to their drainage into Little Bayou and Bayou Creeks and identify the extent of contamination in these areas. Activity II samples will collected at a rate of 4 samples for every ½ acre for a complete listing of characterization chemicals (i.e., PCBs, metals, radionulices, and VOAs). It is estimated that a total of 734 Activity II samples will be collected with additional QA/QC samples.</li><li>• The acreage for sampling is based on the length of the creeks multiplied by the width of the creeks. The creeks (Little Bayou and Bayou) average approximately 60 feet wide. The entire width of the creeks will require sampling to prove the extent of contamination. Proving the extent of contamination is critical since the creeks flow across both DOE property and private property.</li></ul> <p>The method(s) used for determining earned value for this WBS element is Actual Unit Completion.</p> <p>Before beginning fieldwork, the project team must have an internal field review (IFR). For this IFR, the project team will put together a work package. This work package includes the following:</p> <ul style="list-style-type: none"><li>• Work instructions – includes hold points</li><li>• Training matrix and evidence of training</li><li>• UCD/USQD</li><li>• Lessons Learned</li><li>• Work authorization and work release from facility managers</li><li>• Procedures</li><li>• AHA</li><li>• Excavation/Penetration Permits</li><li>• RWP</li><li>• Team Meeting documentation</li><li>• Project Organizational Chart</li></ul> <p>In addition to the above, a Sampling Analysis Plan (SAP), Quality Assurance Plan (QAP), Waste Management Plan (WMP), and Health and Safety Plan (H&amp;S) may be needed for any non-CERCLA actions.</p>		

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<p>For CERCLA actions, the appropriate FFA/CERCLA documentation will be required which will include SAP, QAP, WMP, H&amp;S Plan, and other documents, as applicable to the action. These documents may require regulatory approval.</p> <p>The work package and other documentation are developed by personnel that charge to this project and also by personnel that charge to project support service center (i.e., QAP and RWP).</p>		
<b>WBS 04.11.10.10.04 RI/FS Report</b> <ul style="list-style-type: none"><li>Complete D0, D1 and D2 Remedial Investigation/Feasibility Study (RI/FS) Report.</li></ul> <p>The method(s) used for determining earned value for this WBS element is Percent Complete.</p>		
<b>WBS 04.11.10.10.05 Feasibility Study</b> <ul style="list-style-type: none"><li>Complete D0, D1, and D2 Feasibility Study.</li></ul> <p>The method(s) used for determining earned value for this WBS element is Percent Complete.</p>		
<b>WBS 04.11.10.10.06 Proposed Plan</b> <ul style="list-style-type: none"><li>The D0, D1, and D2 PRAP will be written and submitted to the public for acceptance.</li></ul> <p>The method(s) used for determining earned value for this WBS element is Percent Complete.</p>		
<b>WBS 04.11.10.10.07 Record of Decision/LUCIP</b> <ul style="list-style-type: none"><li>The D0, D1, and D2 Record of Decision (ROD) will be developed, pending acceptance of the Proposed Remedial Action Plan (PRAP).</li><li>The ROD will be completed and signed by DOE and EPA, with concurrence from KY.</li><li>Develop the D0, D1, and D2 Land Use Control Implementation Plan (LUCIP).</li></ul> <p>The method(s) used for determining earned value for this WBS element is Percent Complete.</p>		
<b>WBS 04.11.10.10.08 Remedial Design Work Plan</b> <ul style="list-style-type: none"><li>Develop the D0, D1, and D2 Remedial Action Work Plan (RAWP).</li></ul> <p>The method(s) used for determining earned value for this WBS element is Percent Complete.</p>		
<b>WBS 04.11.10.10.09 Remedial Design Report</b> <ul style="list-style-type: none"><li>Develop the D0, D1, and D2 Remedial Action Design Report.</li></ul> <p>The method(s) used for determining earned value for this WBS element is Percent Complete.</p>		
<b>WBS 04.11.10.10.10 Remedial Action Work Plan</b> <ul style="list-style-type: none"><li>Complete D0, D1 and D2 Remedial Action Work Plan.</li></ul> <p>The method(s) used for determining earned value for this WBS element is Percent Complete.</p>		
<b>WBS 04.11.10.10.11 Remedial Action</b> <ul style="list-style-type: none"><li>The remedial action scope includes the planning, evaluation, and conduct of the hot spot removal of contamination in the Bayou/Little Bayou Creek systems and outfall ditches. The remedial action includes the outfalls investigated under the scope of the Surface Water Operable Unit (On-site) (Outfalls 001, 002, 008, 010, 011, 012, and 015) beginning at their respective Kentucky Pollutant Discharge Elimination System (KPDES) compliance points to their drainage into Little Bayou and</li></ul>		

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Bayou Creeks and continues along Little Bayou and Bayou Creeks to their respective discharge points into the confluences of the Ohio River.			
<ul style="list-style-type: none"><li>The following table illustrates the estimated length and width of Bayou Creek, Little Bayou Creek, Outfalls 001, 002, 008, 010, 011, 012, and 015, along with the estimated percentage targeted for hot spot removal.</li></ul>			
SWOU Off-site Hot Spot Volume Information			
Location	Estimated Excavation Width	Estimated Length	Percentage Targeted for Hot Spot Removal
Bayou Creek	30 feet	34,000 linear feet	5%
Little Bayou Creek	20 feet	30,000 linear feet	10%
Outfall 001	20 feet	1,320 linear feet	50%
Outfall 002	20 feet	1,743 linear feet	50%
Outfall 008	20 feet	330 linear feet	25%
Outfall 010	20 feet	1,320 linear feet	50%
Outfall 011	20 feet	660 linear feet	50%
Outfall 012	20 feet	660 linear feet	50%
Outfall 015	20 feet	1,320 linear feet	25%
<ul style="list-style-type: none"><li>The remedial action will be completed in accordance with the CERCLA decision documents.</li><li>It is anticipated that the remedial action will include waste characterization, excavation of hot spots, verification sampling to ensure hot spot removal, backfilling excavated areas to grade, and revegetating the areas, as appropriate.</li><li>During hot spot removal activities, site-specific storm water/sediment run-on and runoff controls will be employed. Controls will include silt fencing, straw bales or diversion berms to prevent surface water run-on, and application of water spray during earthwork activities to prevent fugitive dust emissions and spread of contamination. Sediment controls will be removed when sufficient establishment of new vegetative growth is established.</li><li>Contaminated soils and sediments and associated materials from Bayou Creek, Little Bayou Creek, Outfalls 001, 002, 008, 010, 011, 012, and 015 will be generated and containerized, pending waste characterization and disposition.</li><li>Based upon process knowledge and existing historical data, the <i>in situ</i> volume of soils to be excavated is expected to be 102,000 ft<sup>3</sup> for Bayou Creek, 120,000 ft<sup>3</sup> for Little Bayou Creek and a total of 130,560 ft<sup>3</sup> for Outfalls 001, 002, 008, 010, 011, 012, and 015. Estimates were based upon the calculation of the hot spot area. The hot spot area is currently defined as a percentage of the creek or outfall and assumes a depth of 2 feet.</li><li>The waste soil material generated from the Bayou Creek and Little Bayou Creek remediation will be transported to and disposed of at an appropriate receiving facility. It is anticipated, based on process knowledge and historical data that 100% of the waste soil generated from Bayou Creek will be disposed of at the on-site C-746-U Landfill, and that 50% of the waste soil generated from Little Bayou Creek the will be disposed of at an off-site disposal facility and that 50% of the waste soils will be disposed of at the on-site C-746-U Landfill. Outfalls 001, 008 and 015 are located on the west side of the plant and 100% of the waste soil generated will be disposed of at the on-site C-746-U Landfill. Outfalls 002, 010, 011, and 012 are located on the east side of the plant and 50% of the waste soil generated will be disposed of at an off-site disposal facility and 50% of the waste soils will be disposed of at the on-site C-746-U Landfill. Disposal at an off-site facility is required due to the concentrations of PCBs and the exceedance of the C-746-U Landfill waste acceptance criteria (WAC) for radionuclides.</li><li>The waste disposition scope includes the disposal of waste material generated as part of the remedial action. All waste soil material generated from remediation of the Bayou Creek, Little Bayou Creek, Outfalls 001, 002, 008, 010, 011, 012, and 015 will be transported to and disposed of at an</li></ul>			

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<p>appropriate receiving facility. It is anticipated that approximately 124,596 ft<sup>3</sup> (with swell) will be transported to and disposed of at the EnergySolutions site in Utah. It is anticipated up to 298,476 ft<sup>3</sup> (with swell) will be transported to and disposed of at the C-746-U Landfill.</p> <p>The method(s) used for determining earned value for this WBS element is Actual Unit Completion.</p> <p>Before beginning fieldwork, the project team must have an internal field review (IFR). For this IFR, the project team will put together a work package. This work package includes the following:</p> <ul style="list-style-type: none"> <li>• Work instructions – includes hold points</li> <li>• Training matrix and evidence of training</li> <li>• UCD/USQD</li> <li>• Lessons Learned</li> <li>• Work authorization and work release from facility managers</li> <li>• Procedures</li> <li>• AHA</li> <li>• Excavation/Penetration Permits</li> <li>• RWP</li> <li>• Team Meeting documentation</li> <li>• Project Organizational Chart</li> </ul> <p>In addition to the above, a Sampling Analysis Plan (SAP), Quality Assurance Plan (QAP), Waste Management Plan (WMP), and Health and Safety Plan (H&amp;S) may be needed for any non-CERCLA actions.</p> <p>For CERCLA actions, the appropriate FFA/CERCLA documentation will be required which will include SAP, QAP, WMP, H&amp;S Plan, and other documents, as applicable to the action. These documents may require regulatory approval.</p> <p>The work package and other documentation are developed by personnel that charge to this project and also by personnel that charge to project support service center (i.e., QAP and RWP).</p> <p><b>WBS 04.11.10.10.12 Remedial Action Completion Report</b></p> <p>Following completion of the field activities, the subcontractor will demobilize from the site, and a draft (D1) and final (D2) version of the Remedial Action Completion Report will be developed and submitted for review and approval.</p> <p>The method(s) used for determining earned value for this WBS element is Percent Complete.</p> <p><b><u>DELIVERABLES</u></b></p> <p><b>WBS 04.11.10.10.01 Surface Water Off-site Subproject Management</b></p> <p><u>Element Milestones:</u></p> <ul style="list-style-type: none"> <li>• None</li> </ul> <p><u>Element Deliverables:</u></p> <ul style="list-style-type: none"> <li>• Paducah Contractor Quality Assurance Project Plan</li> <li>• Paducah Contractor ES&amp;H Plan</li> <li>• Provide input to the following reports and submittals (if applicable): <ul style="list-style-type: none"> <li>○ Monthly Project Performance Report</li> <li>○ Risk Management Plan Updates</li> <li>○ Site Management Plan (SMP)</li> <li>○ Semiannual Critical Analysis Report</li> </ul> </li> </ul>		

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<ul style="list-style-type: none"><li>○ Presentations</li><li>○ Federal Facility Agreement (FFA) briefings</li><li>○ Labor Standards Determinations</li><li>○ Gold Chart Performance Metrics</li><li>○ Annual updates to Site Treatment Plan</li><li>○ Annual Compliance Agreement Report</li><li>○ Annual ISMS Update</li><li>○ Annual Work Smart Standards Update</li><li>○ Financial Reporting, Management Analysis Reporting System</li><li>○ Annual Statement of Costs Incurred and Claimed</li><li>○ FFA Semiannual Progress Report</li><li>○ Remedial Action/Regulatory Commitment Tracking Report</li><li>○ Other reports/documents, as necessary</li></ul>		
<b>WBS 04.11.10.10.02 RI/FS Work Plan</b> <u>Element Milestones:</u> <ul style="list-style-type: none"><li>• Approval of RI/FS Work Plan</li></ul> <u>Element Deliverables:</u> <ul style="list-style-type: none"><li>• RI/FS Work Plan D0, D1, and D2 versions</li></ul>		
<b>WBS 04.11.10.10.03 Remedial Investigation</b> <u>Element Milestones:</u> <ul style="list-style-type: none"><li>• Completion of the Remedial Investigation</li></ul> <u>Element Deliverables:</u> <ul style="list-style-type: none"><li>• Completion of the waste disposal</li></ul>		
<b>WBS 04.11.10.10.04 RI/FS Report</b> <u>Element Milestones:</u> <ul style="list-style-type: none"><li>• Approval of RI/FS Report</li></ul> <u>Element Deliverables:</u> <ul style="list-style-type: none"><li>• RI/FS Report D0, D1, and D2 versions</li></ul>		
<b>WBS 04.11.10.10.05 Feasibility Study</b> <u>Element Milestones:</u> <ul style="list-style-type: none"><li>• Approval of the Feasibility Study</li></ul> <u>Element Deliverables:</u> <ul style="list-style-type: none"><li>• <u>Feasibility Study</u> D0, D1, and D2 versions</li></ul>		
<b>WBS 04.11.10.10.06 Proposed Plan</b> <u>Element Milestones:</u> <ul style="list-style-type: none"><li>• Approval of the Proposed Plan</li></ul> <u>Element Deliverables:</u> <ul style="list-style-type: none"><li>• Proposed Plan D0, D1, and D2 versions</li></ul>		
<b>WBS 04.11.10.10.07 Record of Decision/LUCIP</b> <u>Element Milestones:</u> <ul style="list-style-type: none"><li>• Approval of the Record of Decision/LUCIP</li></ul>		

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Element Deliverables:

- Record of Decision/LUCIP D0, D1, and D2 versions

**WBS 04.11.10.10.08 Remedial Design Work Plan**

Element Milestones:

- Approval of the Remedial Design Work Plan

Element Deliverables:

- Remedial Design Work Plan D0, D1, and D2 versions

**WBS 04.11.10.10.09 Remedial Design Report**

Element Milestones:

- Approval of the Remedial Design Report

Element Deliverables:

- Remedial Design Report D0, D1, and D2 versions

**WBS 04.11.10.10.10 Remedial Action Work Plan**

Element Milestones:

- Approval of Remedial Action Work Plan

Element Deliverables:

- Remedial Action Work Plan D0, D1, and D2 versions

**WBS 04.11.10.10.11 Remedial Action**

Element Milestones:

- Completion of SWOU (Off-site) Remedial Action fieldwork

Element Deliverables:

- Completion of waste disposal

**WBS 04.11.10.10.12 Remedial Action Completion Report**

Element Milestones:

- Approval of Remedial Action Completion Report

Element Deliverables:

- Remedial Action Completion Report D0, D1, and D2 versions

**REQUIREMENTS**

- CERCLA/National Contingency Plan
- KY Hazardous Waste Permit (KY8-890-008-982)
- FFA for the PGDP
- SMP for the PGDP (annual revisions)
- Applicable state and federal laws and regulations (applicable or relevant and appropriate requirements)
- Contractor ISMS
- UEO-1066, as updated, Lease Agreement between DOE and USEC, Revision 4, dated October 30, 2001
- Enclosure to GDP 95-0018, as updated - USEC and DOE Resolution of Shared Site Issues.



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Revision 1, dated March 30, 1998

- Applicable contractor plans, policies, and procedures
- Waste acceptance criteria for all applicable treatment and disposal facilities that were in effect on April 24, 2006
- Applicable DOE Orders
- Applicable Federal Acquisition Regulations

It is the core value of the Contractor that the safety and health of every worker, the public at large, and our environment are the most important assets that we are entrusted to protect. To accomplish this, an ISMS, based on DOE's ISMS, has been implemented that incorporates the five core functions and is based on the seven guiding principles. The objective of ISMS is to systematically integrate safety and environmental protection into the planning and execution of all work activities. The term safety encompasses Nuclear Safety, Industrial Safety, Industrial Hygiene, Occupational Health, Health Physics, and environmental issues. ISMS requirements flow down to Contractor subcontractors. The five core functions are (1) define the scope of work, (2) analyze hazards, (3) develop and implement hazard controls, (4) perform work within controls, and (5) provide feedback and continuous improvement. The seven guiding principles are (1) line management responsibility for safety, (2) clear roles and responsibilities, (3) competence commensurate with responsibility, (4) balanced priorities, (5) identification of safety standards and requirements, (6) hazard control tailored to work being performed, and (7) operations authorization.

Before a subproject begins, several activities must be completed that demonstrate that all involved in the project have completed rigorous health and safety reviews and that all potential hazards of doing the work have been identified. The routine activities in remedial actions are conducted in accordance with standard operating procedures, activity hazard analyses, and Integrated Safety Management plans. Nonroutine work will require a readiness assessment, as necessary, to ensure complete health, safety, and environmental reviews prior to work start. This assessment is conducted by people experienced in similar kinds of work with the right to examine all aspects of a project about to commence and requires that the project team provide documented evidence that any applicable requirements of the job have been met.

**SCOPE ASSUMPTIONS**

- The primary driver is the Resource Conservation Recovery Act (RCRA)/CERCLA process outlined by the PGDP FFA and SMP.
- The major contaminants of concern identified in this scope of work are radionuclides and polychlorinated biphenyls (PCBs) in the materials, sediments, and surface soils.
- Excavation/restoration work in the outfalls and creeks will require permission from the U.S. Army Corps of Engineers, either as part of a 404 permit, or in a letter granting CERCLA exemption from the 404 process.
- No additional excavation in the off-site ditches/creeks will be required as part of any future remedial action.

**COMPLETION CRITERIA**

**WBS 04.11.10.10.01 Surface Water Off-site Subproject Management**

- Completion of all technical and reporting requirements for the conduct and reporting of the Remedial Action.

**WBS 04.11.10.10.02 RI/FS Work Plan**

- EPA/KY approval of the RI/FS Work Plan.

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<b>4. WBS ELEMENT CODE</b> 04.11.10.10	<b>5. WBS ELEMENT TITLE</b> Outyear Surface Water Off-site	
<b>WBS 04.11.10.10.03 Remedial Investigation</b> <ul style="list-style-type: none"><li>• Completion of all sampling and analysis as defined in the SAP.</li></ul>		
<b>WBS 04.11.10.10.04 RI/FS Report</b> <ul style="list-style-type: none"><li>• EPA/KY approval of the RI/FS Report.</li><li>• Deliver copies of document to Infrastructure contractor for archive.</li><li>• Delivery of copies of document to the Infrastructure contractor for placement in the EIC.</li></ul>		
<b>WBS 04.11.10.10.05 Feasibility Study</b> <ul style="list-style-type: none"><li>• EPA/KY approval of the Feasibility Study.</li><li>• Deliver copies of document to Infrastructure contractor for archive.</li><li>• Delivery of copies of document to the Infrastructure contractor for placement in the EIC.</li></ul>		
<b>WBS 04.11.10.10.06 Proposed Plan</b> <ul style="list-style-type: none"><li>• EPA/KY approval of the Proposed Plan.</li><li>• Deliver copies of document to Infrastructure contractor for archive.</li><li>• Delivery of copies of document to the Infrastructure contractor for placement in the EIC.</li></ul>		
<b>WBS 04.11.10.10.07 Record of Decision/LUCIP</b> <ul style="list-style-type: none"><li>• EPA/KY approval of the Record of Decision/LUCIP.</li><li>• Deliver copies of document to Infrastructure contractor for archive.</li><li>• Delivery of copies of document to the Infrastructure contractor for placement in the EIC.</li></ul>		
<b>WBS 04.11.10.10.08 Remedial Design Work Plan</b> <ul style="list-style-type: none"><li>• EPA/KY approval of the Remedial Design Work Plan.</li><li>• Deliver copies of document to Infrastructure contractor for archive.</li><li>• Delivery of copies of document to the Infrastructure contractor for placement in the EIC.</li></ul>		
<b>WBS 04.11.10.10.09 Remedial Design Report</b> <ul style="list-style-type: none"><li>• EPA/KY approval of the Remedial Design Report.</li><li>• Deliver copies of document to Infrastructure contractor for archive.</li><li>• Delivery of copies of document to the Infrastructure contractor for placement in the EIC.</li></ul>		
<b>WBS 04.11.10.10.10 Remedial Action Work Plan</b> <ul style="list-style-type: none"><li>• EPA/KY approval of the Remedial Action Work Plan.</li><li>• Deliver copies of document to Infrastructure contractor for archive.</li><li>• Delivery of copies of document to the Infrastructure contractor for placement in the EIC.</li></ul>		
<b>WBS 04.11.10.10.11 Remedial Action</b> <ul style="list-style-type: none"><li>• Completion of the Remedial Action requirements defined by the Remedial Action Work Plan.</li><li>• Waste will be disposed of within one year of generation.</li><li>• Hot spots will be removed and backfilled.</li></ul>		
<b>WBS 04.11.10.10.12 Remedial Action Completion Report</b> <ul style="list-style-type: none"><li>• EPA/KY approval of the Remedial Action Completion Report.</li><li>• Deliver copies of document to Infrastructure contractor for archive.</li><li>• Delivery of copies of document to the Infrastructure contractor for placement in the EIC.</li></ul>		
<b><u>RISK MANAGEMENT</u></b> <p>See Risk Management Plan for analysis.</p>		

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Risk was mitigated through the following efforts:

- Continue to perform due diligence in all work activities to reduce the possibility of safety incidents.
- Perform due diligence to ensure that waste is properly packaged and that transportation conveyances are properly loaded.
- Follow waste characterization, packaging, transportation, and disposition procedures and plans.
- Ensure that documents are written professionally and accurately.
- Ensure that fieldwork is carried out safely and in accordance with work instructions.
- DQOs will have qualitative and quantitative statements derived from the DQO Process that clarify study objectives, define the appropriate type of data, and specify the tolerable levels of potential decision errors that will be used as the basis for establishing the quality and quantity of data needed to support decisions and process knowledge.
- Subcontractor will follow ALARA principles and approved decontamination procedures.

#### **CERCLA AREAS AND SWMU**

<b>SWMU No.</b>	<b>Description</b>
64	Little Bayou Creek
65	Big Bayou Creek
93	Concrete Disposal Area East of Plant Security Area
105	Concrete Rubble Pile (3)
106	Concrete Rubble Pile (4)
107	Concrete Rubble Pile (5)
108	Concrete Rubble Pile (6)
109	Concrete Rubble Pile (7)
113	Concrete Rubble Pile (11)
129	Concrete Rubble Pile (27)
175	Concrete Rubble Pile (28)
199	Big Bayou Creek Monitoring Station
<b>SWMU No.</b>	<b>Description</b>
185	Horseshoe Lagoon
205	Eastern Portion of Yellow Waterline
541	Contamination Area by Outfall 011
549	Concrete Rubble by Outfall 008
550	Concrete Culverts Sections, West of Outfall 001 Ditch

#### **BASIS OF ESTIMATE**

##### **1. Summary of Site Conditions**

The Hot Spot Removal of the source ditches (up to the compliance point) that feed into the Bayou and Little Bayou Creeks has been completed.

##### **2. Estimating Methods**

☐ Parametric    ☐ Bottom-Up    ☒ Other: Parametric & Bottom-Up

##### **3. Sources of Estimating**

Labor – Technical review of documents to be prepared determined the mix of labor required for document preparation. Echols & R.S. Means were used to determine craft types to be used for construction-type activities. Project team meetings were utilized to identify staff types to be used for other areas, such as sample collection and analysis, waste characterization and disposal, health and safety monitoring, etc.

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Equipment – Echols & R.S. Means were two printed sources used to determine the types of equipment needed to conduct the work proposed. Experience from technical staff also provided input as to the type of equipment needed.

Materials – Same as equipment.

Other Direct Cost – Same as equipment.

Transportation – Same as equipment.

Subcontracts – Experience from technical staff provided requirements for the involvement of subcontracts.

**4. Basis of Estimate (Unescalated Values)**  
See Detail Estimate.

**WASTE VOLUMES**

See attached waste performance metrics, as applicable.

**PROJECT SCHEDULE**

See attached schedule.

**BASELINE BY YEAR**

See attached Baseline by Year Report.